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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/668,398 | 09/22/2000 | Alan V. McCree | TI-29490 | 2360 |

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EXAMINER

NOLAN, DANIEL A

| ART UNIT | PAPER NUMBER |
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2655

DATE MAILED: 07/02/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

12

Office Action Summary

Application No.

09/668,398

Applicant(s)

MCCREE, ALAN V.

Examiner

Daniel A. Nolan

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4 is/are rejected.
- 7) ☒ Claim(s) 3 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendment

2. The response filed 17 March was applied to the following effect:
 - The specification was changed as indicated and those objections not repeated in this action were withdrawn as satisfied.
 - The claim was changed as indicated and the objection withdrawn as complete.
 - Claims 4-5 were added and examined on the merits.

Response to Arguments

3. Applicant's arguments filed 17 March 2003 have been fully considered but they are not persuasive.
 - Regarding the issue with Thyssen that the *filter* is changed, and not the *subframe*, any change to be effected on processing a subframe through a filter is made to the image of the subframe represented in the filter memory that is to subsequently be applied to the subframe (see line 61 column 9). The filter would have no effect if the change were not to be applied to the subframe, while

Art Unit: 2655

conversely the filter would be spoilt for processing further subframes if the change were made to the filter itself but not to that part of the filter that retains images of subframe elements for change.

- In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *one LSF quantization, one LPC interpolation*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification, such as:

- The grammatical number is not in agreement (page 4, 1st sentence, 2nd paragraph). "Has" should be "have".
- "*Heuristic*" (mid-page 4) should be "not to scale and are description aids".

Appropriate correction is required.

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- In claim 2, the stipulation that *said sub-frame **has** a length equal to an integer multiple of an interval of said LP coefficients update* is neither found in the specification, nor can it be extrapolated to be based on the LPC samples since the *subframe* – with its attendant length – would preexist the LP coefficient update.
- The Examiner is proceeding with the understanding that the sub-frame length is established independently as a consequence of LPC processing.

6. The abstract of the disclosure is objected to because the sentences are not complete. Correction is required. See MPEP § 608.01(b).

Claim Objections

7. Claim 2 is objected to because of the following informalities:

- In claim 2, "... *length of an interval of said LP coefficients update*" should read, "... *length of an interval of said updated LP coefficients update*" (2nd & 3rd lines).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claim 4 was rejected under 35 U.S.C. 102(a) as being anticipated by Serizawa (U.S. Patent 6,101,464 A).

10. Regarding claim 4, the coding system for speech invention of Serizawa reads on the features of the claim as follows:

- Serizawa (column 2 lines 39-44) reads on the feature of *providing waveform excitation sub-frames*
- Serizawa (column 1 lines 26-32) teaches the feature of *providing a plurality of sets of LP coefficients for each sub-frame* (column 11 lines 22-24).
- Serizawa (column 2 lines 38-60) teaches the feature of finding waveform excitations for subframes using sets of LP coefficients (column 8 lines 17-20).

Claim Rejections - 35 USC § 103

Thyssen & Kim et al

11. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thyssen (U.S. Patent 6,480,822) in view of Kim et al ("On A Modified Cepstral Pitch Control Technique For The High Quality Text-To-Speech Type System", Midwest Symposium on Circuits and Systems, pages 616-619, August 1998).

12. Regarding claim 1, the low complexity random codebook of Thyssen applies to the features as follows:

- Thyssen (column 6 lines 47-48) reads on the feature of *(a) a linear prediction* (column 9 line 27), *pitch* (column 10 line 1) and *voicing analyzer* (column 12 line 46).
- Thyssen (Abstract, line 9) acknowledges the use of *waveform coding* but expresses reservations without specifying those modifications that would overcome the stated deficiencies.

Kim et al (from the 5th-line from bottom of left column of page 616, to the 3rd line of the adjacent right column) reads on the feature of *(b) a waveform coder coupled to said analyzer*, which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to

Art Unit: 2655

apply the method/teachings of Kim et al to the device/method of Thyssen so as to provide toll-quality speech based on accepted coding methods.

- Thyssen (column 9 lines 58-65) reads on the feature of having *LP coefficients updated within a sub-frame for excitation synthesis*.

Thyssen, Kim et al & Nomura

13. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thyssen in view of Kim et al and further in view of Nomura (Japan Patent 10-207496).

14. Regarding claim 2 as understood by the Examiner, the claim is set forth with the same limits as claim 1. Where Thyssen is silent on the matter of specific subframe lengths, Nomura (specifying in [0031] that the subframe length is set by multiplying integer i to N) which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Nomura to the device/method of Thyssen so as to provide the closest segment amount used as a basis represented by the parameters.

Allowable Subject Matter

15. Claims 3 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

- The present invention is directed to a hybrid speech encoder using both waveform and parametric coding depending on frame contents.
- Claims 3 and 5 identify the uniquely distinct feature that "*the sub-frame length is 80 samples and the LP coefficient update interval is 20 samples*".
- The closest prior art of Su discloses a subframe length of up to 80 samples but fails to anticipate or render the above underlined limitations obvious.

17. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Su (U.S. Patent 5,781,880 A) is a pitch lag estimation using frequency-domain low pass filtering of the linear predictive coding (LPC) residual over 20 sub-frame samples.
- Ozawa (Japan Patent 03-017700) encodes LP residual sub-frames.
- Ono (Japan Patent 02-153399) encodes LP parameters over sub-frame intervals.
- Akamine (Japan Patent 02-044400) processes LP parameters in sub-frames.

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To, can be reached at (703) 305-4827.

The fax phone number for Technology Center 2600 is (703) 872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE".

Formal response to this action may be faxed according to the above instructions, or mailed to:

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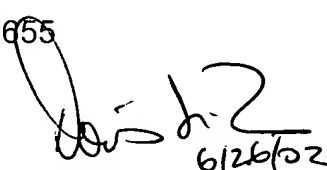
or hand-delivered to:

Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

DAN/d
June 19, 2003

Daniel A. Nolan
Examiner
Art Unit 2655


DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600